

ABSTRACT

A dual band, dual pol, variable downtilt, 90 degree azimuth beamwidth
5 antenna (10). The antenna includes dipole elements (12, 14) forming both a PCS
band and a cellular band antenna. The PCS band antenna has two sections
disposed each side of the cellular band antenna, the elements of each being
positioned 90° with respect to the other. A microstrip feed network formed upon
a common PC board (18) feeds the respective dipole elements, and has
10 serpentine portions with a corresponding dielectric member slideable thereover to
establish the phase of the associated dipole antennas and achieve a linear downtilt
of the respective antenna array. A slide rod adjustment assembly (100) provides
unitary movement of the dielectric members between two different slide rods.
These dielectric members are secured with adhesive to the respective slide rods to
15 achieve good dielectric control and no use of hardware. The radiating dipole
elements are capacitively coupled to each microstrip, and are also capacitively
associated reflector element. One arm of the reflector element is offset at least 45
degrees with respect to the other arm to improve cross polarization.